

## 2.2 Astronomy TAG

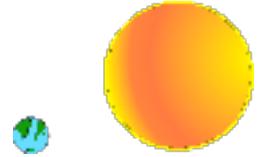
### Make a Model of the Apparent Motion of the Sun

Name \_\_\_\_\_

Hour \_\_\_\_\_ Date \_\_\_\_\_

Read the top of p. 73.

Draw a picture of the Earth, with a line showing its axis.



#### Investigation 1: Make a Model that Shows Changes in the Shadow's Direction

Read and complete the procedures on pp. 73-74.

Describe the way the direction of the shadows changed.

Describe what you did to the globe and the flashlight to simulate the pattern of shadow directions on a sundial. Include a sketch.

#### Investigation 2: Make a Model to Show Changes in the Shadow's Length

Read and complete the procedures on pp. 74.

Describe how the length of the shadows changed.

Describe what you did to the globe and the flashlight to simulate the pattern of shadow lengths on a sundial. Include a sketch.

#### Investigation 3: Make a Model that Shows Changes in Both the Shadow's Length and Direction

Read and complete the procedures on pp. 74-75.

Describe the way the direction and length of the shadows changed.

Describe what you did to the globe and the flashlight to simulate the pattern of shadows on a sundial. Include a sketch.

### Reflect

1. Which motion or motions did you use to replicate the shadow pattern: spinning the globe, moving the flashlight, or both?
2. Answer this question if your answer to the first question was “both.” Do you think spinning the globe and moving the flashlight are both necessary to replicate the shadow pattern? Why or why not?
3. Answer this question if your answer to the first question was only spinning the globe or only moving the flashlight but not both. Do you think you could produce the same pattern in the shadows by switching which object moves? Why or why not?
4. With your group, develop a claim about which movements of Earth and/or the Sun cause you to see the Sun move across the sky every day.



**Read** “The Rotating Earth” on pp. 76-77.

1. What do you see if you’re standing in a place that is just starting to turn toward the Sun (moving into the light)? About what time of day is this?
2. What would a person see if they’re standing exactly on the other side of the Earth at the same time? About what time of day is this for them?
3. How long does it take Earth to rotate once on its axis? What do we call this period of time?



### Stop & Think/Explain

If needed, revise your claim about the movement of Earth and/or the Sun. Use a Create an Explanation page to explain which movements of Earth and/or the Sun cause you to see the Sun move across the sky every day.

### Communicate

Follow your teacher’s instructions to share explanations.

### Update the Project Board